14. (NEW) A method for optimizing data packet transmission through a connection between a sending node and a receiving node in a data communication network, comprising the steps of:

(a) periodically determining current network conditions in the connection between the sending node and the receiving node wherein the network conditions pertain to the latency and jitter of packet transmission between the sending node and receiving node, and

(b) determining from the current network conditions an optimum packet size and an optimum inter-packet interval for transmission of packet data between the sending node and the receiving node.

15. (NEW) The method for optimizing data packet transmission through a connection between a sending node and a receiving node of claim 14, wherein in step (b) further includes:

(1) determining the optimum packet size and the optimum inter-packet interval for transmission of packet data between the sending node and the receiving node for a given amount and type of data to be communicated between the sending node and the receiving node.

16. (NEW) The method for optimizing data packet transmission through a connection between a sending node and a receiving node of claim 14, wherein step (a) further includes the steps of:

(a1) transmitting a sequence of monitor packets of a selected size from the sending node to the receiving node at a selected inter-packet interval,

(a2) in the receiving node, reflecting the monitor packets from the receiving node to the sending node in the sequence in which the monitor packets are received at the sending node, and

(a3) in the sending node and upon receiving the reflected monitor packets from the receiving node, determining network conditions in the connection between the sending node and the receiving node wherein the network conditions pertain to the latency and jitter of packet transmission between the sending node and receiving node for monitor packets of a known size and known inter-packet transmission interval.

17. (NEW) The method for optimizing data packet transmission through a connection between a sending node and a receiving node of claim 16, wherein:

each monitor packet includes

a departure time representing a time the monitor packet was transmitted from the sending node, a packet size representing a size of the monitor packet and a packet number representing a numerical position of the monitor packet in the sequence of monitor packets.

18. (NEW) The method for optimizing data packet transmission through a connection between a sending node and a receiving node of claim 17, wherein:

(1) the network conditions determined through the monitor packets include a maximum two way delay time for the transmission and reflection of a monitor packet, a minimum two way delay time for the transmission and reflection of a monitor packet, an average two way delay time for the monitor packets, an average jitter of the monitor packets, and a number of packets out of sequence.

19. (NEW) The method for optimizing data packet transmission through a connection between a sending node and a receiving node of claim 18, wherein the network conditions determined through the monitor packets further include:

(2) a number of packets lost.

20. (NEW) The method for optimizing data packet transmission through a connection between a sending node and a receiving node of claim 16, wherein:

(1) the network conditions determined through the monitor packets include an available bandwidth and a jitter of the connection.

21. (NEW) The method for optimizing data packet transmission through a connection between a sending node and a receiving node of claim 20, wherein:

the network conditions determined through the monitor packets further include an average jitter, a maximum jitter and a minimum jitter.

22. (NEW) The method for optimizing data packet transmission through a connection between a sending node and a receiving node of claim 16, wherein:

the network conditions determined through the monitor packets further include a sequence in which the monitor packets are received at the receiving node.

23. (NEW) The method for optimizing data packet transmission through a connection between a sending node and a receiving node of claim 16, wherein:

the network conditions determined through the monitor packets further include a number of monitor packets lost.

24. (NEW) The method for optimizing data packet transmission through a connection between a sending node and a receiving node of claim 14, further comprising the step of:

(c) transmitting data packets from the sending node to the receiving node with packet sizes and at inter-packet intervals determined according to the network conditions.

25. (NEW) The method for optimizing data packet transmission through a connection between a sending node and a receiving node of claim 14, further comprising the steps of:

(a1) transmitting a sequence of monitor packets from the sending node to the receiving node,

(a2) in the receiving node, reflecting the monitor packets from the receiving node to the sending node in the sequence in which the monitor packets are received at the sending node, and

(a3) in the sending node and upon receiving the reflected monitor packets from the receiving node, determining network conditions in the connection between the sending node and the receiving node wherein the network conditions pertain to the latency and jitter of packet transmission between the sending node and receiving node for monitor packets of a known size and known inter-packet transmission interval, and

(c) in the sending node and from the network conditions, determining an optimum packet size and an optimum inter-packet interval for transmitting packets from the sending node to the receiving node.

26. (NEW) The method for optimizing data packet transmission through a connection between a sending node and a receiving node of claim 25, further comprising the steps of:

(d) in the receiving node, determining network conditions from the received monitor packets.

27. (NEW) The method for optimizing data packet transmission through a connection between the sending node and the receiving node of claim 26, further comprising the steps of:

(e) in the receiving node, storing the network conditions in one or more condition records.

28. (NEW) The method for optimizing data packet transmission through a connection between a sending node and a receiving node of claim 26, further comprising the steps of:

(d) returning the network conditions determined in the receiving node to the sending node, and

(e) in the sending node, updating the optimum packet size and inter-packet interval using the network conditions determined in the receiving node.

29. (NEW) A method for optimizing data packet transmission through a connection between a sending node and a receiving node in a data communication network, comprising the steps of:

(a) transmitting packets from the sending node to the receiving node,

(b) in the receiving node and for each packet received from the sending node, generating and transmitting to the sending node an acknowledgment of receipt of the packet, and

(c) in the sending node and upon receiving the acknowledgments of packets from the receiving node, determining network conditions in the connection between the sending node and the receiving node wherein the network conditions pertain to the latency and jitter of packet transmission between the sending node and receiving node for monitor packets of a known size and known inter-packet transmission interval, and

(c) in the receiving node and from the network conditions, determining an optimum packet size and optimum inter-packet interval for transmission of data packets to the receiving node.

30. (NEW) A method for optimizing data packet transmission through a connection between a sending node and a receiving node in a data communication network, comprising the steps of:

(a) transmitting a sequence of data packets from the sending node to the receiving node,

(b) in the receiving node, determining network conditions from the received data packets

(c) returning the network conditions determined in the receiving node to the sending node, and

(d) in the sending node, using the network conditions determined in the receiving node to determine an optimum packet size and an optimum inter-packet interval for the transmission of data packets from the sending node to the receiving node.

31. (NEW) An adaptive packet mechanism for optimizing data packet transmission through a connection between a sending node and a receiving node in a data communication network, comprising:

(a) a sending node packet transfer engine and a receiving node packet transfer engine communicating through the connection for periodically determining current network conditions in the connection between the sending node and the receiving node wherein the network conditions pertain to the latency and jitter of packet transmission between the sending node and receiving node, and

(b) a collector/controller for determining from the current network conditions an optimum packet size and an optimum inter-packet interval for transmission of packet data between the sending node and the receiving node.

32. (NEW) The adaptive packet mechanism for optimizing data packet transmission through a connection between a sending node and a receiving node in a data communication network of claim 31, wherein:

(1) the collector/controller determines the optimum packet size and the optimum inter-packet interval for transmission of packet data between the sending node and the receiving node for a given amount and type of data to be communicated between the sending node and the receiving node.

33. (NEW) The adaptive packet mechanism for optimizing data packet transmission through a connection between a sending node and a receiving node in a data communication network of claim 31, wherein:

(a1) the sending node packet transfer engine is responsive to the collector/controller for transmitting a sequence of monitor packets of a selected size from the sending node to the receiving node at a selected inter-packet interval,

(a2) the receiving node packet transfer engine is responsive to monitor packets received from the sending node for reflecting the monitor packets from the receiving node to the sending node in the sequence in which the monitor packets are received at the sending node, and

(a3) the sending node packet transfer engine is responsive to reflected monitor packets received from the receiving node for determining network conditions in the connection between the sending node and the receiving node wherein the network conditions pertain to the latency and jitter of packet transmission between the sending node and receiving node for monitor packets of a known size and known inter-packet transmission interval.

34. (NEW) The adaptive packet mechanism for optimizing data packet transmission through a connection between a sending node and a receiving node in a data communication network of claim 33, wherein:

each monitor packet includes

a departure time representing a time the monitor packet was transmitted from the sending node, a packet size representing a size of the monitor packet and a packet number representing a numerical position of the monitor packet in the sequence of monitor packets.

35. (NEW) The adaptive packet mechanism for optimizing data packet transmission through a connection between a sending node and a receiving node in a data communication network of claim 34, wherein:

(1) the network conditions determined through the monitor packets include a maximum two way delay time for the transmission and reflection of a monitor packet, a minimum two way delay time for the transmission and reflection of a monitor packet, an average two way delay time for the monitor packets, an average jitter of the monitor packets, and a number of packets out of sequence.

36. (NEW) The adaptive packet mechanism for optimizing data packet transmission through a connection between a sending node and a receiving node in a data communication network of claim 35, wherein the network conditions determined through the monitor packets further include:

(2) a number of packets lost.

37. (NEW) The adaptive packet mechanism for optimizing data packet transmission through a connection between a sending node and a receiving node in a data communication network of claim 33, wherein:

(1) the network conditions determined through the monitor packets include an available bandwidth and a jitter of the connection.

38. (NEW) The adaptive packet mechanism for optimizing data packet transmission through a connection between a sending node and a receiving node in a data communication network of claim 37, wherein:

the network conditions determined through the monitor packets further include an average jitter, a maximum jitter and a minimum jitter.

39. (NEW) The adaptive packet mechanism for optimizing data packet transmission through a connection between a sending node and a receiving node in a data communication network of claim 33, wherein:

the network conditions determined through the monitor packets further include a sequence in which the monitor packets are received at the receiving node.

40. (NEW) The adaptive packet mechanism for optimizing data packet transmission through a connection between a sending node and a receiving node in a data communication network of claim 33, wherein:

the network conditions determined through the monitor packets further include a number of monitor packets lost.

41. (NEW) The adaptive packet mechanism for optimizing data packet transmission through a connection between a sending node and a receiving node in a data communication network of claim 31, wherein:

(c) the sending node packet transfer engine is responsive to the optimum packet size and inter-packet interval determined by the collector/controller for transmitting data packets from the sending node to the receiving node with packet sizes and at inter-packet intervals determined according to the network conditions.

42. (NEW) The adaptive packet mechanism for optimizing data packet transmission through a connection between a sending node and a receiving node in a data communication network of claim 31, wherein:

(d) the receiving node packet transfer engine is responsive to monitor packets received from the sending node for determining network conditions from the received monitor packets.

43. (NEW) The adaptive packet mechanism for optimizing data packet transmission through a connection between a sending node and a receiving node in a data communication network of claim 42, wherein:

(e) the receiving node packet transfer engine is responsive to the monitor packets received from the sending node for storing the network conditions in one or more condition records.

44. (NEW) The adaptive packet mechanism for optimizing data packet transmission through a connection between a sending node and a receiving node in a data communication network of claim 43, wherein:

(e) the receiving node packet transfer engine is responsive to the monitor packets received from the sending node for providing the network conditions determined in the receiving node to the collector/controller, and

(f) the collector/controller is responsive to the network conditions determined in the receiving node for updating the optimum packet size and inter-packet interval using the network conditions determined in the receiving node.

45. (NEW) An adaptive packet mechanism for optimizing data packet transmission through a connection between a sending node and a receiving node in a data communication network, comprising:

(a) a sending node packet transfer engine for transmitting packets from the sending node to the receiving node,

(b) a receiving node packet acknowledgment mechanism responsive to each packet received in the receiving node from the sending node for generating and transmitting to the sending node packet transfer engine an acknowledgment of receipt of the packet,

(c) the sending node packet transfer engine being responsive to the acknowledgments of packets from the receiving node for determining network conditions in the connection between the sending node and the receiving node wherein the network conditions pertain to the latency and jitter of packet transmission between the sending node and receiving node for monitor packets of a known size and known inter-packet transmission interval, and

(c) a collector/controller responsive to the network conditions determining an optimum packet size and optimum inter-packet interval for transmission of data packets to the receiving node.

46. (NEW) An adaptive packet mechanism for optimizing data packet transmission through a connection between a sending node and a receiving node in a data communication network, comprising:

(a) a sending node packet transfer engine for transmitting a sequence of data packets from the sending node to the receiving node,

(b) a receiving node packet transfer engine for determining network conditions from the received data packets, and

(d) a collector/controller responsive to the network conditions determined by the receiving node packet transfer engine for determining an optimum packet size and an optimum inter-packet interval for the transmission of data packets from the sending node to the receiving node.